*भारतीय मानक*
*Indian Standard*

**IS 17582 : 2021**

# शिशु मीटर के लिए विशिष्टि

# Specification for Infantometer

ICS 17.040.30

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भारतीय मानक ब्यूरो
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**June 2021** **Price Group 3**

Weights and Measures Sectional Committee, PGD 26

## FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards, after the draft finalized by the Weights and Measures Sectional Committee had been approved by the Production and General Engineering Division Council.

This Indian Standard is addressed to manufacturers, suppliers, importers and users (paediatricians etc.) of the infantometers described in the scope.

Guidelines of UNICEF and ICDS on this product has been given due consideration while preparing this standard.

The composition of the Committee responsible for the preparation of this standard is given in Annex B.

For the purpose of deciding whether a particular requirement of this standard is complied with the final value, observed or calculated, expressing the result of a test or analysis shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values ( *revised* )'.

# *Indian Standard*

# SPECIFICATION FOR INFANTOMETER

## 1 SCOPE

**1.1** This standard specifies the construction, material, dimensional and metrological requirements for the infantometer which are portable board for measuring length of baby or infants upto the age of 24 months.

**1.2** This standard is designed for the infantometer to measure length of baby in recumbent position.

## 2 REFERENCES

The standards given below contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. The standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent edition of this standard.

| *IS No.* | *Title* |
|---|---|
| 17077 (Part 1) : 2019 | Plastics — Acrylonitrile butadiene styrene (ABS) moulding and extrusion materials: Part 1 Designation system and basis for specifications |
| 17050 : 2018/<br>IEC 62262 : 2002 | Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts (IK Code) |
| IS/IEC 60529 : 2001 | Degrees of protection provided by enclosures (IP Code) |
| 9873 (Part 1) : 2019/<br>ISO 8124-1 : 2018 | Safety of toys: Part 1 Safety aspects related to mechanical and physical properties |
| 6455 : 1972 | Specification for single row radial ball bearings |

## 3 TERMS AND DEFINITIONS

### 3.1 Material Measure of Length

Material measure provided with scale marks, the distances between which are indicated in legal units of length.

### 3.2 Nominal Length

Length by which the measure is designated.

### 3.3 Principal Scale Marks

Two scale marks, the distance between which represents the nominal length of the measure.

### 3.4 Scale

Set of all the scale marks and associated numbering.

### 3.5 Scale Interval

Value expressed in units of length of: the difference between the values corresponding to two consecutive scale marks, for analog indication; or the difference between two consecutive indicated values, for digital indication.

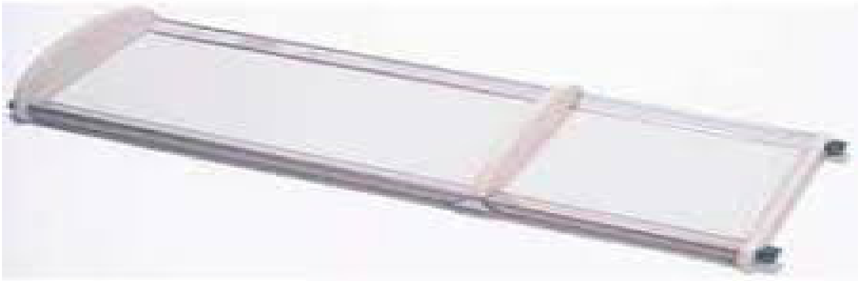
## 4 CONSTRUCTION

**4.1** The design of the infantometer shall be as given below:

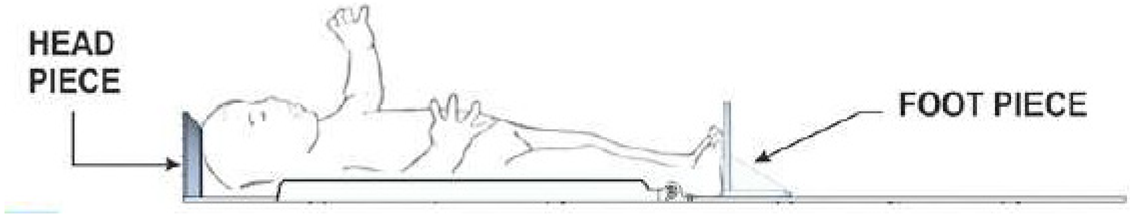
a) The board shall be firm, flat horizontal surface with atleast 30 cm width;
b) Fold-up mechanism and low weight, compact and easy to transport;
c) No part shall be loose or shaking during transportation;
d) Simple and fast set up, no tools (screwdriver, etc.) required;
e) Length of infantometer shall be max of 120 cm;
f) Weight of infantometer shall be max of 2 kg, for stainless steel board, the max weight shall not exceed 4 kg; and
g) Angled edges (curved) to prevent baby from rolling sidelong.

**4.2** The typical design of the infantometer is given in Fig 1. The head piece shall be fixed and foot piece as mentioned in the Fig. 1(b) shall be movable/sliding part smoothly.

**4.3** The graduation marks for the measurement shall be on both the sides of the board either embossed/inscribed or any other method which shall inerasable and indelible. The graduation marks shall be visible in low light also.



(a)



(b)

FIG. 1 TYPICAL INFANTOMETER WITH A) TOP VIEW AND B) SIDE VIEW WITH INFANT

**4.4** Lock system to the Foot position may be provided, so that after measuring, the motion of the foot piece to be fixed.

## 5 MATERIAL

**5.1** The boards of the infantometer shall be made of either of the following materials:

- a) Acrylonitrile Butadiene Styrene (ABS) plastic confirming to IS 17707 (Part 1). ABS board should be designed with ribs of thickness 6 mm and other places thickness should be 3.5 mm.
- b) Wood, any of the below:
  - 1) Teak (Tctona grandis Linn. F);
  - 2) Roseweed (Delbergia Latifolia Roxb);
  - 3) Sheehsam (Dalbergia Sisso Roxb);
  - 4) Haldu (Adina Cordifolia Hoock. f);
  - 5) Bijasal (Pterocarpus marsupium Roxb); and
  - 6) Boxwood (Blaxux Sempervirens).
- c) Stainless steel of Grade X02Cr19Ni10 confirming to IS 6529.
- d) Aluminium alloy, duly anodized.

**5.2** The slide of the meter shall be equipped with either sheet angle guides or ball bearing type guides so that foot piece shall move easily. The guide angles shall be made from mild steel sheet not less than 1.25 mm thick. The ball bearings shall confirm to IS 6455.

**5.3** The slider can also be made up of ABS with 90 degree angle to touch the feet of child. The slider and board should be designed to enable smooth movement of slider.

## 6 TYPES OF INFANTOMETER

Based on the material used for the construction of the infantometer, it is of 3 types:

- a) Plastic Infantometer (made of ABS **5.1 (a)**);
- b) Wooden Infantometer (made of wood **5.1 (b)**); and
- c) Metallic Infantometer (made of steel **5.1 (c)**, made of aluminium alloy **5.1 (d)**).

## 7 METROLOGICAL REQUIREMENTS AND MARKINGS

**7.1** The value of the main scale division shall not exceed 1 cm with smallest graduation at every 0.1 cm. The marks at the centimetre divisions shall be of 2.5 cm long and those at 5 mm divisions shall be of 1.5 cm.

**7.2** Scales shall be marked with a cross mark at every 5 cm of the measure.

**7.3** The tape measure shall be graduated only in metric units. In addition to it, graduations in units other than metric units may be made such that it shall not interfere with graduations in metric units. However indication of units other than metric units shall not be made on any surface of the tape measure.

**7.4** The graduations on the scale/instrument shall be marked as below:

a) Shall be clear, regular indelible and long lasting. Graduation shall be carried out in such a way that reading is definite easy and unambiguous in low light conditions;
b) Double sided graduation for easy measurements;
c) Orientation of numerals on the measurement scale: parallel to the board;
d) Facilitating quick and easy reading of results;
e) Precision: ±0.2 cm; Accuracy: ±0.2 cm; and
f) Measurement range: Should be able to measure upto 100 cm at least.

**7.5** Graduation lines shall be reasonably straight, perpendicular to the longitudinal axis of the tape measure (board) and of uniform thickness and size throughout the length.

**7.6** The thickness of the graduation Innes shall not exceed 0.4 mm.

## 8 MECHANICAL TESTS

### 8.1 Sharp Edge Test

There shall be No sharp edges or corners throughout the instrument. The edges of the board shall confirm to IS 9873 (Part 1) in view of the safety to the infant.

### 8.2 Design Test for Heavy Duty Use

The instrument shall be designed and manufactured in such a way that it shall be used in every demanding circumstances confirming to IS 17050. It shall be durable, resistant to effects of excessive humidity and high temperature, water resistant and shock resistant confirming to IS/IEC 60529.

## 9 CALIBRATION OF THE INSTRUMENT

**9.1** Scale shall be calibrated which are traceable to the national measurement standards.

**9.2** The instrument shall be calibrated once in a year either from National Physical Laboratory, Regional Laboratories of Weights and Measures (Legal Metrology) Department or any other authorized agency for the calibration.

## 10 BIS CERTIFICATION MARKING

The product(s) conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the *Bureau of Indian Standards Act*, 2016 and the Rules and Regulations framed thereunder, and the products may be marked with the Standard Mark.

# ANNEX A

( *Informative* )

## GUIDE TO ACCURATELY MEASURING THE LENGTH OF A CHILD

**A-1** The following steps are to be followed for proper measuring the height/length of the child. Measuring the length of a child may require two people to ensure correct measurement. Length measurement is appropriate for most children under 2 years, and older if unable to stand.

a) Lay child with their head against the headboard, and feet flat on the footboard, with their shoes and socks removed.

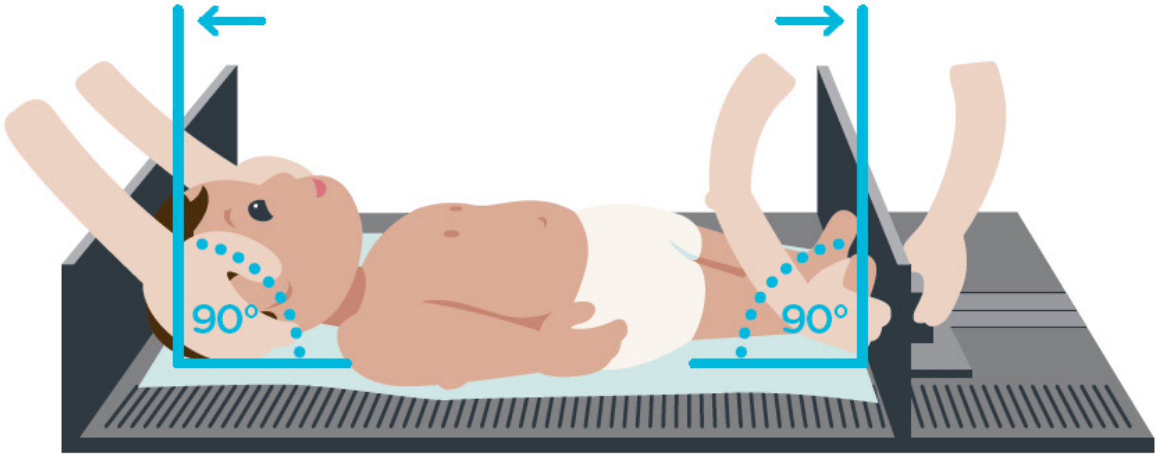
b) Gently bring the top of the child's head into contact with the fixed headboard. The child should be looking straight up.

c) Hold the child's knees and feet so they are together and flat against the board.

d) Apply firm pressure to the child's feet and knees. The child's feet should be at right angles to the base of the board.

e) Read the length to the nearest complete millimetre (do not round up!).

f) Plot the length measurement on the relevant chart and include in the child's medical record.



# ANNEX B

( *Foreword* )

## COMMITTEE COMPOSITION

Weights and Measures Sectional Committee, PGD 26

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## Amendments Issued Since Publication

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